AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1.   (Currently Amended) A method for processing imagery using an Electro-Optical (EO) system, comprising the steps of:

selecting a first frame of data as a template frame;

capturing a second frame of data using the EO system;

correlating at least a portion of the second frame with the template frame to generate a shift vector;

registering the second frame with the template frame by interpolating the second frame using the shift vector and re-sampling at least a portion of the second frame to produce a registered frame;

re-sampling the template frame; ~~and~~

combining the re-sampled template frame and the registered frame to generate an averaged frame; and

selecting another frame of data as an updated template frame to which a subsequently captured frame of data is registered.

2.   (Original) The method of claim 1, wherein the step of registering the second frame uses bilinear interpolation.

3.   (Original) The method of claim 1, comprising the step of:

adding motion to a line of sight of the EO system using a commanded line of

sight pattern or a random pattern to generate multiple frames of data.

4.   (Original) The method of claim 1, comprising the step of:

spatially filtering the averaged frame to enhance edges within the averaged

frame.

5.   (Original) The method of claim 1, comprising the step of:

utilizing a histogram projection to change a pixel depth of the averaged frame.

6.   (Original) The method of claim 1, comprising the step of:

re-sampling the averaged frame.

7.   (Original) The method of claim 6, wherein the step of re-sampling the

averaged frame uses bilinear interpolation.

8.   (Original) The method of claim 1, comprising the steps of:

capturing a first frame of data using the EO system; and

temporally filtering at least the first frame to generate the template frame.

9.   (Currently Amended) The method of claim 8, wherein the step of re-

sampling the first template frame uses bilinear interpolation.

10.   (Currently Amended) An Electro-Optical (EO) system for processing imagery, comprising:

a sensor for generating input data; and

a processor module coupled to the sensor, the processor module configured to:

select a first frame of data as a template frame;

capture a second frame of data using the EO system;

correlate at least a portion of the second frame with the template frame to generate a shift vector;

register the second frame with the template frame by interpolating the second frame using the shift vector and re-sampling at least a portion of the second frame to produce a registered frame;

re-sample the template frame; and

combine the re-sampled template frame and the registered frame to generate an averaged frame; and

select another frame of data as an updated template frame to which a subsequently captured frame of data is registered.

11.   (Currently Amended) The EO system of claim 10, wherein the processor module, in registering the second frame, is configured to use bilinear interpolation.

12.   (Original) The EO system of claim 10, wherein the processor module is configured to:

add motion to a line of sight of the EO system using a commanded line of sight pattern or a random pattern to generate multiple frames of data.

13. (Original) The EO system of claim 10, wherein the processor module is configured to:

spatially filter the averaged frame to enhance edges within the averaged frame.

14. (Original) The EO system of claim 10, wherein the processor module is configured to:

utilize a histogram projection to change a pixel depth of the averaged frame.

15. (Original) The EO system of claim 10, wherein the processor module is configured to:

re-sample the averaged frame.

16. (Currently Amended) The EO system of claim 15, wherein the processor module, in re-sampling the averaged frame, is configured to use bilinear interpolation.

17. (Original) The EO system of claim 10, wherein the processor module is configured to:

capture a first frame of data using the EO system; and

temporally filter at least the first frame to generate the template frame.

18.   (Currently Amended) The EO system of claim 17, wherein the processor module, in re-sampling the first template frame, is further configured to use bilinear interpolation.

19.   (New) The method of claim 1, comprising successively selecting further frames of data at intervals of a predetermined number of frames to be updated template frames.

20.   (New) The apparatus of claim 10, wherein the processor module is configured to successively select further frames of data at intervals of a predetermined number of frames to be updated template frames.

21.   (New) A method for processing imagery using an Electro-Optical (EO) system, comprising the steps of:

(a) selecting a frame of data as a template frame;

(b) capturing another frame of data using the EO system;

(c) correlating at least a portion of the another frame with the template frame to generate a shift vector;

(d) registering the another frame with the template frame by interpolating the another frame using the shift vector and re-sampling at least a portion of the another frame to produce a registered frame;

(e) re-sampling the template frame;

(f) combining the re-sampled template frame and the registered frame to generate an averaged frame; and

(g) repeating steps (b) through (f) to process subsequently-captured frames of data.

22.   (New) An Electro-Optical (EO) system for processing imagery, comprising:

a sensor for generating input data; and

a processor module coupled to the sensor, the processor module configured to:

(a) select a frame of data as a template frame;

(b) capture another frame of data using the EO system;

(c) correlate at least a portion of the another frame with the template frame to generate a shift vector;

(d) register the another frame with the template frame by interpolating the another frame using the shift vector and re-sampling at least a portion of the another frame to produce a registered frame;

(e) re-sample the template frame;

(f) combine the re-sampled template frame and the registered frame to generate an averaged frame; and

(g) repeat steps (b) through (f) to process subsequently-captured frames of data.